Food and Agriculture Organization of the United Nations

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

THE SECOND REPORT ON THE STATE OF THE WORLD'S FOREST GENETIC RESOURCES *in brief*

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Planted forests in China

People use trees and other woody plants (shrubs, bamboos and rattans) for multiple purposes and manage them in a broad range of production systems, including natural forests and woodlands. The genetic resources of these species underpin the sustainable supply of diverse products and make essential contributions to food security, livelihoods and ecosystem services. Moreover, the genetic diversity of trees and other woody plants is crucial for maintaining the resilience of forests and enabling their adaptation to climate change.

The Second Report on the State of the World's Forest Genetic Resources (Second Report) assesses the conservation, sustainable use and development of the world's forest genetic resources (FGR), defined as the heritable materials maintained within and among tree and other woody plant species that are of actual or potential economic, environmental, scientific or societal value. It builds on the first edition of *The State of the World's Forest Genetic Resources* (First Report), published by FAO in 2014, and analyses the progress made in implementing the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources, adopted by the FAO Conference in 2013.

The Second Report on the State of the World's Forest Genetic Resources draws on data and information provided by 77 countries representing more than three-quarters of the world's forests

The Second Report is based on data and information provided by 77 countries (see table) via an online questionnaire; combined, these countries represent more than three-quarters of the global forest area. Nearly half (37) of the reporting countries also submitted written reports with complementary information. In total, more than 450 national experts contributed to the data and information contained in this report through these two means. The Second Report also

List of countries that provided data and information on their forest genetic resources

Region	Countries
Africa (14 countries)	Burkina Faso (Q), Eswatini (Q), Ethiopia (Q), Guinea (Q, W), Kenya (Q), Madagascar (Q), Mali (Q), Mauritania (Q), Morocco (Q), Namibia (Q), Niger (Q), Nigeria (Q), South Africa (Q), Zimbabwe (Q)
Asia (9 countries)	China (Q, W), India (Q), Indonesia (Q), Japan (Q, W), Lao People's Democratic Republic (Q), Malaysia (Q), Republic of Korea (Q, W), Sri Lanka (Q, W), Thailand (Q, W)
Europe (34 countries)	Armenia (Q), Austria (Q), Belgium (Q), Bulgaria (Q, W), Croatia (Q, W), Cyprus (Q), Czechia (Q, W), Denmark (Q, W), Estonia (Q), Finland (Q, W), France (Q, W), Georgia (Q), Germany (Q, W), Greece (Q, W), Hungary (Q), Iceland (Q, W), Ireland (Q, W), Italy (Q, W), Lithuania (Q, W), Luxembourg (Q), Malta (Q, W), Netherlands (Kingdom of the) (Q, W), Norway (Q, W), Poland (Q,W), Portugal (Q, W), Russian Federation (Q), Serbia (Q, W), Slovenia (Q, W), Spain (Q, W), Sweden (Q, W), Switzerland (Q, W), Türkiye (Q), Ukraine (Q, W), United Kingdom of Great Britain and Northern Ireland (Q, W)
Latin America and the Caribbean (11 countries)	Antigua and Barbuda (Q), Argentina (Q, W), Brazil (Q, W), Chile (Q), Ecuador (Q), El Salvador (Q, W), Guatemala (Q), Mexico (Q), Panama (Q), Peru (Q), Saint Lucia (Q)
Near East (3 countries)	Iran (Islamic Republic of) (Q), Lebanon (Q, W), Yemen (Q)
North America (2 countries)	Canada (Q, W), United States of America (Q, W)
Southwest Pacific (4 countries)	Australia (Q, W), Cook Islands (Q), Fiji (Q), Vanuatu (Q)

Note: Q = online questionnaire completed; W = written report submitted.

draws on inputs from two regional networks on FGR[1] and four organizations with global activities on FGR,[2] as well as on recent scientific literature.

Forest genetic resources tend to be overlooked in international policy fora on sustainable development, biodiversity, climate change and sustainable forest management. Global awareness of the importance of FGR and their contributions to sustainable development is still low. With the world not on track to achieve most of the Sustainable Development Goals and Global Forest Goals by 2030, there is an urgent need to intensify efforts with new investment, including by strengthening implementation of the Global Plan of Action.

The availability of information on FGR has increased but remains inadequate, hindering efforts to improve FGR management. Countries reported on more than 2 800 species for the Second Report, with 64 percent indicating that they maintain national FGR inventories and 55 percent reporting that they have national FGR information systems. Seven countries reported having established national FGR inventories and national FGR information systems in the last decade. The most common area of focus is FGR conservation, followed by the production of forest reproductive material and research and development.

Access to and the availability of information on FGR remains limited. FGR information is scattered at the national level, and existing FGR inventories often struggle to connect multiple databases maintained by different stakeholders to gain a comprehensive picture of the status of FGR. Several international organizations have created databases to make information and knowledge available on various aspects of FGR, but, in many countries, key stakeholders are unaware of these, thus limiting their use. There is a need to promote existing valuable sources of information and knowledge on FGR.

[1] The Asia Pacific Forest Genetic Resources Programme and the European Forest Genetic Resources Programme.

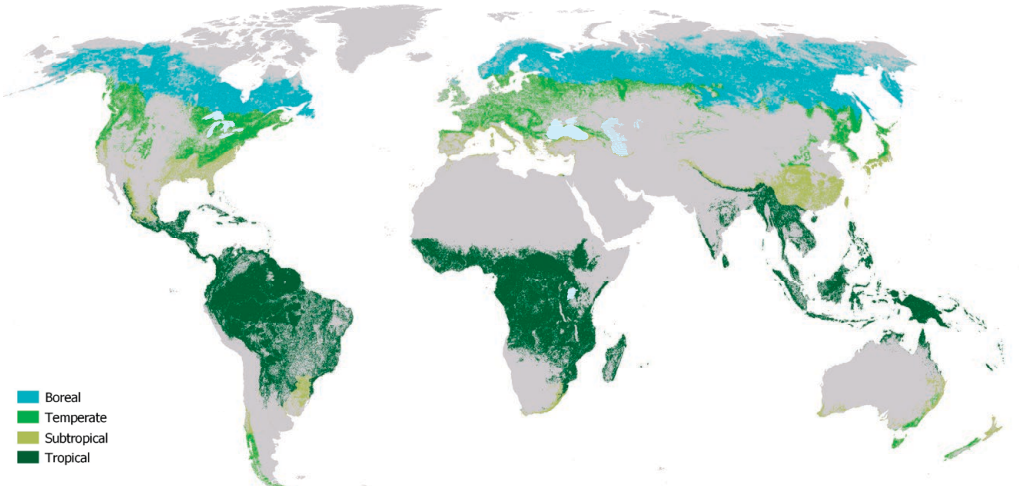
[2] The Alliance of Bioversity International and the International Center for Tropical Agriculture; Botanic Gardens Conservation International; the Royal Botanic Gardens, Kew; and World Agroforestry.

Countries reported on more than **2 800 species of trees** and other woody plants. Nearly two-thirds of countries have national inventories on forest genetic resources, but many noted challenges in collating information held by different stakeholders

Only 28 percent of the Commission's Members contributed to both the First Report and the Second Report, suggesting that few countries collect basic information on FGR, which is essential for informing decisions and guiding effective policies and practices.

Forests cover nearly one-third of the world's land area but deforestation continues, especially in the tropics. The global forest area was about 4.06 billion ha (31 percent of the total land area) in 2020. Nearly half (45 percent) of the world's forests are in the tropical biome, followed by the boreal (27 percent), temperate (16 percent) and subtropical (11 percent) biomes. Deforestation remains a pressing challenge: despite global efforts to halt deforestation and increase forest cover, the annual rate of net forest loss was 4.74 million ha over the decade to 2020. Agricultural expansion (conversion of forests to cropland and for livestock grazing) is the main direct driver of deforestation, accounting for nearly 90 percent of global deforestation in 2000–2018; other factors are unsustainable harvesting and infrastructure development. Deforestation threatens ecosystems, exacerbates climate change and undermines the well-being of those people – especially many Indigenous Peoples and local communities – who rely on forests for their food security, livelihoods and cultural heritage. Addressing the loss of forests and their genetic resources requires a collective effort to promote integrated sustainable land-use practices, strengthen forest governance, and support conservation initiatives that balance economic, social and environmental needs.

The global distribution of forests, by climatic domain



Note: Refer to the disclaimer on the back cover for the names and boundaries used in this map.
Source: FAO. 2020. *Global Forest Resources Assessment 2020: Main report*. Rome. https://doi.org/10.4060/ca9825en

Almost **90 percent of deforestation** in 2000–2018 was due to conversion of forests to cropland and for livestock grazing

Trees and other woody plants also occur in other areas, such as woodlands and agroforests, which collectively cover about one-fifth of the world's land area. The global extent of other wooded land (OWL) was reported at 977 million ha in 2020, although remote sensing suggests a much larger area (1.7 billion ha), indicating significant gaps in national reporting. The global area of OWL was reported to decline by 31 million ha between 1990 and 2020. Agroforests, which are rarely inventoried systematically, also cover large areas, with estimates indicating that up to 1.11 billion ha of croplands and grasslands globally have more than 10 percent tree cover. Combined, OWLs and agroforests could cover about 2.7 billion ha, which is close to 20 percent of the global land area. Studies have indicated substantial tree species diversity in woodlands, although data coverage is patchy, and agroforestry systems harbour varied tree species diversity, from one to several hundred species. Strengthening global reporting, integrating agroforestry into sustainable land-use strategies, and involving local communities in land management are crucial for ensuring the long-term viability of these vital landscapes and the FGR they harbour.

Taxonomic and threat assessments carried out in the last decade have increased information on the status of trees and other woody plants. For example, one-quarter of the world's 58 000 tree species have documented uses and nearly one-third is threatened. Trees occur in nearly all parts of the world, but their species diversity is concentrated in the tropical and subtropical forest biomes. There are nearly 58 000 named tree species globally, about one-quarter (24 percent) of which have documented – and often multiple – uses. Of all tree species, 58 percent are endemic to one country, and the natural distributions of most of the other species are limited to certain regions or specific habitats. About 30 percent of all tree species are threatened; most of these are in the tropics or subtropics.

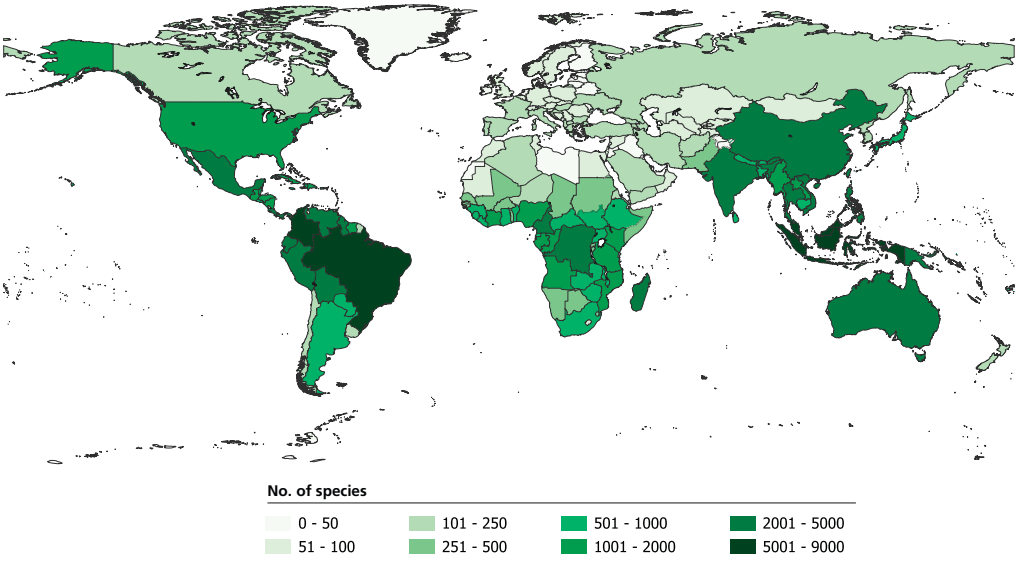
The world has nearly **58 000 species of trees**, about **1 600 species of woody bamboo** and nearly **500 species of rattan**. Nearly one-third of tree species is threatened, and most are in the tropics. No comprehensive threat assessment has been carried out for bamboos and rattans

There are about 1 600 species of woody bamboo and nearly 500 species of rattan. Twelve percent of bamboos have documented uses and relatively few bamboo species are common and widespread; most are rare. The diversity of rattan species is concentrated in tropical Asia and the Pacific. No comprehensive threat assessment has been carried out for bamboos and rattans.

The threats to trees and other woody species vary. In the tropics and subtropics, the main threats are forest conversion to agriculture and unsustainable harvesting. In boreal and temperate forests, invasive species, insect pests and diseases threaten several species. Climate change is creating challenges for trees and other woody plants in all forest biomes and exacerbating damage caused by fires, insect pests and diseases. Infrastructure development is another common threat in most regions.

The loss of genetic diversity in trees and other woody plants continues, especially in the tropics and subtropics. Tree species are typically outcrossing (i.e. breeding with other individuals), which maintains high genetic diversity that, in turn, enables adaptation across a wide range of environments and down the often-long-lived generations. Trees generally carry high genetic loads (i.e. of deleterious recessive alleles), however, and inbreeding (selfing or small populations) can therefore reduce fertility, regeneration and adaptability and increase susceptibility to pests and diseases. Many species in boreal and temperate

Tree species richness based on the natural distributions of all tree species



Note: Refer to the disclaimer on the back cover for the names and boundaries used in this map

Source: Authors' own elaboration using data from: BGCI. 2024a. *GlobalTreeSearch online database*. Richmond, UK. Cited 30 May 2024. www.bgci.org

forests have large natural ranges and population sizes and maintain high genetic diversity. In the tropics and subtropics, many species have more limited distributions and are more vulnerable to genetic erosion. Globally, deforestation, forest degradation, fire, pests, diseases and invasive species not only threaten many tree and other woody plant species but erode their populations and genetic diversity. Despite this, there is evidence that genetic diversity remains high in common and widely distributed species but that some rare and threatened species have lost significant genetic diversity – close to 40 percent in one case.

Genetic diversity has been characterized for **1 784 species of trees and other woody plants** based on non-molecular and/or molecular information

Genetic diversity has been characterized for 1 661 species of trees and other woody plants based on non-molecular information (typically obtained from provenance trials) and for 750 species based on molecular information (e.g. range-wide sampling of populations for molecular marker studies); the number of unique species characterized based on molecular and/or non-molecular information totals 1 784. Many studies have been carried out in different parts of the world to characterize genetic diversity with molecular techniques, but few of these have assessed changes in genetic diversity over time. Some countries have established genetic monitoring systems for tracking temporal change in a few selected species, but such systems are in their infancy.

The number of species targeted by *in situ* FGR conservation programmes increased in the last decade, but these programmes include only about 2 percent of all species. *In situ* FGR conservation involves the conservation of species and their genetic resources in the locations and ecosystems in which

Genetic reserve of small-leaved lime (*Tilia cordata*) in Finland

they occur naturally, thereby enabling the continuation of evolutionary processes within populations. *In situ* FGR conservation is thus intrinsically dynamic because it enables temporal and spatial changes in genetic diversity. Importantly, the approach does not exclude FGR use by people, provided that the regeneration and continued evolution of species are not jeopardized.

83 percent of reporting countries have national *in situ* conservation programmes for forest genetic resources, mainly comprising protected areas, genetic reserves and production forests. About **1 400 species** are included in these programmes

Of the reporting countries, 83 percent indicated that they have national *in situ* FGR conservation programmes; combined, these comprise more than 35 100 conservation units. The most common programme components are protected areas (indicated by 70 percent of reporting countries), genetic reserves (68 percent) and production forests (53 percent). A few countries (5 percent) also use other components, such as permanent monitoring or research plots and sacred forests. The number of species included in these conservation programmes has increased from nearly 1 000 (including subspecies) in the First Report to nearly 1 400, although this still represents only about 2 percent of all named species.

In situ conservation efforts often occur outside existing protected areas, and a large proportion of tree species receives only limited protection in protected areas. This points to the importance of designing *in situ* FGR conservation programmes with multiple

Seeds of pod mahogany (*Afzelia quanzensis*) analysed for *ex situ* conservation in the United Republic of Tanzania

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components, which could include forest patches in agricultural landscapes. There is a need to better understand the adequacy of existing *in situ* FGR conservation efforts at the country level and across species' distributions, keeping in mind susceptibility to threats, especially those posed by human activities and climate change.

***Ex situ* FGR conservation is a crucial complement of *in situ* conservation, and it is also important for the supply of germplasm for reforestation and restoration efforts.** The aim of *ex situ* FGR conservation – conservation that takes place beyond a species' natural habitat – is to maintain representative samples of genetic diversity, either in a static state in seed banks and field collections or in dynamically evolving *ex situ* conservation stands. This approach serves as an important backup to *in situ* conservation, especially when a species' population size in its natural habitat is low or where a threat is high and immediate. It also helps preserve genetic diversity for purposes like reforestation and tree breeding.

75 percent of reporting countries have national *ex situ* conservation programmes for forest genetic resources, commonly involving storage facilities for seeds, pollen and other tissues, *ex situ* conservation stands, and field collections. These *ex situ* conservation programmes involve nearly **1 100 species**

Of the reporting countries, 75 percent indicated that they have national *ex situ* FGR conservation programmes in place. The most common component of these programmes is storage facilities for seeds, pollen and other tissues (reported by 64 percent of the countries), *ex situ* conservation stands (62 percent), and field collections (e.g. clonal archives and stool beds; 61 percent). Tree-seed centres (or tree gene banks), which typically operate separately from crop gene banks, are the most important storage facilities. About 10 percent of countries also reported other components, such as arboreta, botanic gardens and DNA banks.

Globally, there are about 296 000 accessions in seed banks and field collections, which is almost double the number reported in the First Report (nearly 160 000 accessions). Countries also indicated the existence of more than 14 000 *ex situ* conservation stands covering about 179 000 ha. The reported *ex situ* conservation programmes include nearly 1 100 species (less than 2 percent of all tree species). The number of species in *ex situ* FGR programmes was highest in Asia (401), followed by Latin America and the Caribbean (293), North America (202), Europe (167) and Africa (140).

Research on *ex situ* conservation methods continues to advance, with knowledge increasing on, among other aspects, the seed biology and storage behaviour of forest trees. The seed biology of boreal and temperate tree species is better known than that of tropical species, which often have more challenging seed storage requirements.

Many countries are experiencing persistent or periodic shortages of forest reproductive material, which poses a challenge for achieving the target of a 3 percent increase in the global forest area by 2030 and other global commitments on forests, biodiversity and climate. Demand for forest reproductive material is strong worldwide, but progress in reinforcing national tree-seed programmes has been modest since the First Report. In many countries, the quantity and quality of forest reproductive material are low, and demand is not being met. Climate change is affecting both the production and deployment of forest reproductive material, creating additional complexity for the use of FGR. Many countries noted increased interest in planting native species for restoration and the production of wood and non-wood forest products, with associated increased demand for seeds for a greater range of species. The long reproductive cycles of trees mean it can take years to increase seed supply. Highly ambitious planting commitments and short-term funding typically lead to the use of species and seed sources that are more readily available rather

Harvesting eucalypt seed in Zimbabwe

than those that fulfil the objectives of the planting programmes.

Of the reporting countries, 70 percent indicated that they have national tree-seed programmes, and 60 percent run extension programmes promoting FGR use. Some other countries produce forest reproductive material through multiple initiatives without national-level coordination and oversight. Private-sector initiatives, smallholder farmers and local communities often also produce forest reproductive material, but these sources may not meet national or international quality standards and may have lower genetic diversity than formally registered seed sources.

70 percent of the countries have national tree-seed programmes. Collectively, the reporting countries produce reproductive material for nearly **900 species of trees**, and there are nearly **83 000 seed stands** and **5 800 seed orchards**

Globally, countries reported nearly 900 species for which reproductive material is produced. There are nearly 83 000 seed stands among reporting countries covering about 7 million ha and more than 5 800 seed orchards covering almost 39 000 ha. Country reports indicated that more than 3.1 billion plants are produced annually through macro- and micropropagation, although this is likely an underestimate because many countries with large areas of planted forests did not report their plant production. The annual number of seedlings planted per year varies considerably among countries (from well below 1 million to 15 billion).

Unimproved (i.e. wild) germplasm continues to play a major role in forestry. Several countries reported that they meet shortages in their domestic production with imports of seeds or seedlings, but such imports typically cover only a small portion of overall demand. About 30 of the reporting countries can certify forest reproductive material for international trade.

Both developed and developing countries reported that they have limited financial and human resources for their tree-seed programmes. This poses a significant challenge for global efforts to improve people's livelihoods by establishing new forests to produce wood and non-wood forest products, conserve biodiversity and mitigate climate change.

Tree-improvement and -breeding programmes focus on only 1 percent of species and, for most of those, efforts have not advanced beyond first-generation selection. Tree-improvement and -breeding programmes are ongoing in all regions, albeit at differing levels of intensity and investment. Seventy-five percent of reporting countries indicated that they have such programmes. The main stakeholder groups with tree-breeding programmes are public entities (in 70 percent of reporting countries), private companies (44 percent) and public–private partnerships (30 percent). Sixteen percent of countries reported that other stakeholders – such as registered charities and non-profit associations – also operate tree-breeding programmes.

Nearly **500 species** are subject to tree improvement and breeding. For **60 percent of the species**, first-generation selection represents the most advanced material deployed for production

Among all reporting countries, nearly 500 species are subject to tree-breeding programmes. The number of species in these programmes is highest in Asia (185), followed by Europe (112), Latin America and the Caribbean (108) and Africa (86). The global number of species is lower than in the First Report (730, including subspecies), likely due to the smaller number of reporting countries for the Second Report and the focus on species. For 60 percent of the reported species, first-generation selection represents the most advanced material deployed for production; a further 13 percent of the species have reached 1.5-generation selection (i.e. first-generation seed orchards that have been culled based on progeny tests). About 5 percent of species have reached fourth-generation selection (the most advanced material deployed), as reported by 8 percent of the countries. Hybrid breeding is also a widely applied approach, with a total of 34 hybrids reported globally.

New tools are being used in tree-breeding research, such as marker-assisted selection (in 31 percent of reporting countries) and genomic technologies (20 percent of countries). Genetically modified transformants have been developed for more than 30 tree species but their deployment in practical forestry remains limited because of environmental concerns. Several countries are using gene-editing technologies to study gene functions in forest trees and how research results could be used to accelerate tree breeding. Nevertheless, the application of gene editing to tree improvement and breeding is still in its early stages.

Genetic aspects need to be better incorporated into the management of natural and planted forests. The genetic composition of forests has been shaped for millennia at different scales by both natural disturbances and people. Understanding genetic aspects is crucial for sustainable forest management and for maintaining the adaptability, resilience and productivity of natural and planted forests. The country reports show that forest managers and policymakers tend to overlook genetic aspects, however, and, when they do consider them, they do so more frequently for planted forests. Natural forests are commonly assumed to have ample genetic diversity, although their history is often poorly documented. Many countries indicated that the most damaging drivers of change are climate change, including an increased frequency of catastrophic events (e.g. drought, fire, storms and outbreaks of diseases and insect pests) and invasive species, creating considerable challenges for FGR management.

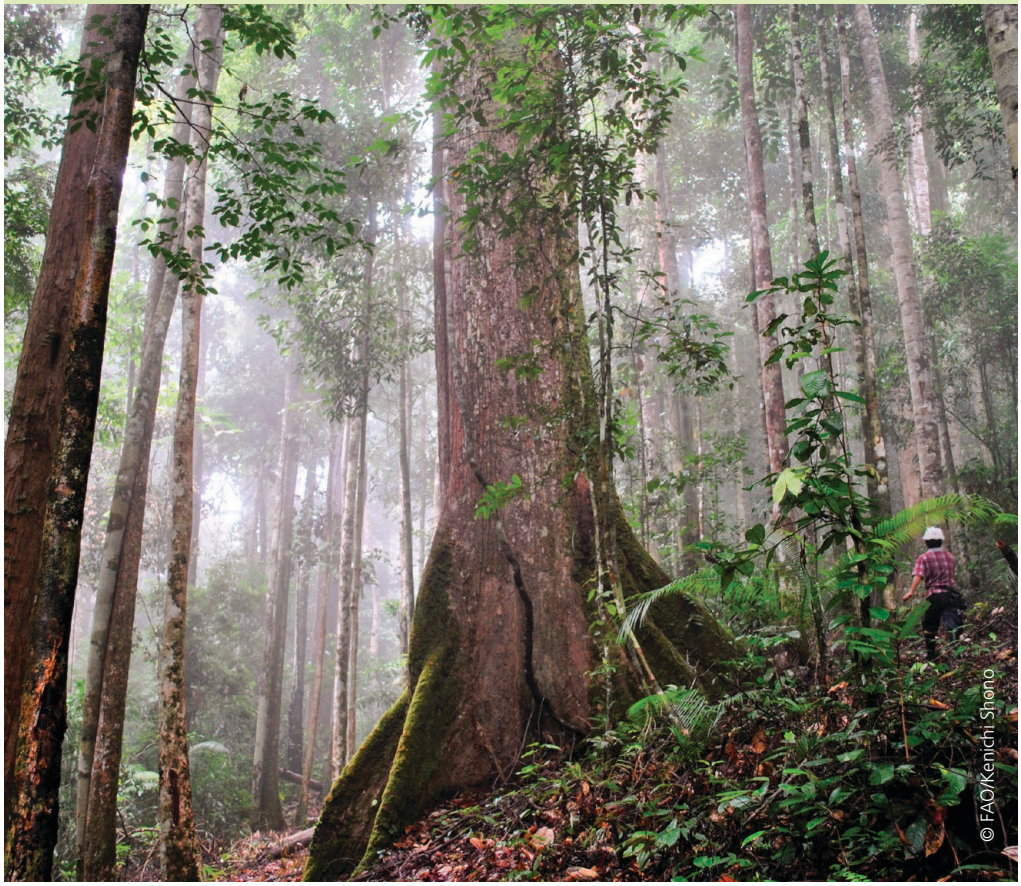
Some countries reported increased recognition among forest managers and policymakers that genetic diversity is essential for the adaptation of forests to climate change and for coping with outbreaks of pests and diseases. Although most managers and policymakers no doubt recognize that

genetic processes and resources are essential for the adaptability of tree species and forests, this is likely implicit rather than always leading to explicit planning provisions. The country reports provided examples of efforts to increase species and genetic diversity in both natural and planted forests and in the restoration of degraded forests.

Deforestation and forest fragmentation have slowed at the global scale and, in many parts of the world, wood harvesting has become less destructive. Nevertheless, many tree species and their populations are showing variable recovery and their genetic status is uncertain, especially in tropical forests. Despite increased research on the impacts of management on tree genetic diversity, the application of research findings to practical management is often elusive.

Several countries have made progress in strengthening their institutional frameworks for FGR conservation, sustainable use and development but, globally, considerable limitations and gaps exist, especially in terms of human and financial resources. Of the reporting countries, 52 percent indicated that they have national FGR coordination mechanisms such as national committees or working groups. These mechanisms are dominated by governmental and research organizations, and participation by farmers, forest

Natural forest in Indonesia



owners, the private sector and non-governmental organizations is less common.

About half of reporting countries have **national coordination mechanisms** for forest genetic resources, and 58 percent have **national strategies** for these resources

About 58 percent of reporting countries have developed national FGR strategies, but these tend to be focused on FGR conservation and give less attention to FGR use and development. The integration of FGR in national forest, biodiversity and climate policies is inadequate.

Countries have made relatively little progress in strengthening human capacity for managing FGR, and some countries noted that their human resources have declined since the First Report. FGR are seldom well covered by technical and vocational forestry education, and few countries have academic FGR-related education programmes. Many countries also reported struggling to mobilize the necessary financial resources for work on FGR.

International and regional cooperation on FGR is indispensable for the implementation of the Global Plan of Action and needs to be reinforced. International and regional cooperation on FGR is crucial because the distribution ranges of many trees and other woody plants extend across countries and even regions, and many threats to FGR do not respect political borders. Such collaboration enables countries to exchange knowledge on FGR, share costs, avoid duplication of effort and manage FGR more efficiently. Of the reporting countries, 69 percent indicated that they participate in international collaboration on FGR-related research and development, and 70 percent reported that they are involved in regional FGR networks. Several countries noted that a lack of financial and human resources and research infrastructure impedes their involvement in international and regional cooperation.

The National Tree Seed Centre, Ghana

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69 percent of reporting countries participate in international collaboration on research and development related to forest genetic resources. Regional FGR networks are participated in by **70 percent** of the countries

The Global Plan of Action is highly relevant to the needs and priorities of countries. Progress has been made in implementing the Global Plan of Action at the national, regional and global levels, but limitations and gaps exist that require continued and reinforced action. The four priority areas identified in the plan – (1) improving the availability of, and access to, information on FGR; (2) conservation of FGR (*in situ* and *ex situ*); (3) sustainable use, development and management of FGR; and (4) policies, institutions and capacity building – and associated strategic priorities are still relevant, according to country reports. The actions recommended in the Second Report (see next page) are in line with the 27 strategic priorities indicated in the Global Plan of Action.

FGR underpins the many contributions of forests and trees to sustainable development and their benefits for people, biodiversity and the climate. It is important, therefore, to increase international awareness of the Global Plan of Action and the amount of resources needed for its effective implementation, particularly at the national level.

Harvesting rattan in the Democratic Republic of the Congo

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Recommended actions for improving the management of forest genetic resources

Priority area 1: Availability of, and access to, information on forest genetic resources

- Establish and strengthen national FGR inventories.
- Develop and maintain national, regional and global FGR information systems.
- Expand genetic monitoring and characterization systems at the national level.
- Raise awareness of the importance of FGR at the national and international levels.
- Further develop the monitoring framework for tracking implementation of the Global Plan of Action (including by providing capacity building for national focal points) and the reporting requirements for assessments of the state of the world's FGR.

Priority area 2: *In situ* and *ex situ* conservation of forest genetic resources

- Reinforce national *in situ* conservation systems.
- Strengthen national *ex situ* conservation systems.
- Analyse gaps in existing efforts for the establishment of new *in situ* and *ex situ* conservation units.
- Carry out threat, needs and resource assessments for prioritizing species and populations for *in situ* and *ex situ* conservation.
- Develop and implement regional *in situ* and *ex situ* conservation strategies to increase coordination and efficiency.

Priority area 3: Sustainable use, development and management of forest genetic resources

- Reinforce national tree-seed programmes to increase the supply of high-quality and well-documented seed.
- Strengthen tree-breeding programmes to increase the availability of improved germplasm.
- Promote the appropriate use of FGR in forestry, including agroforestry and forest restoration.
- Integrate genetic aspects into the management of natural and planted forests.
- Promote the use of appropriate existing and novel technologies in FGR management.

Priority area 4: Policies, institutions and capacity building

- Establish and strengthen national coordination mechanisms on FGR and promote their cooperation with other relevant national programmes and initiatives.
- Develop and implement national strategies for FGR conservation, use and development.
- Promote the integration of FGR management into relevant national policies, strategies and action plans.
- Strengthen educational, technical and research capacities on FGR.
- Reinforce international (including regional) cooperation on FGR to support FGR management at the national level and strengthen scientific collaboration.
- Strengthen efforts at the national, regional and global levels to mobilize financial resources for FGR conservation, use and development.

Forests and woodlands provide a huge array of essential benefits for people and the planet – such as hosting biodiversity, supporting livelihoods, protecting soils, regulating water cycles and mitigating climate change. At the heart of such benefits are forest genetic resources: the heritable materials maintained within and among tree and other woody plant species that are of actual or potential economic, environmental, scientific or societal value. These genetic resources underpin the resilience, adaptability and productivity of forests and other tree-based systems, enabling them to withstand environmental stresses and thereby continue providing vital ecosystem services.

Drawing on data and information from 77 countries representing more than three-quarters of the world's forests, ***The Second Report on the State of the World's Forest Genetic Resources*** provides a global assessment of forest genetic resources. It highlights the crucial role of these resources for sustainable development and examines progress in implementing the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources. The report reviews scientific advances and concludes with recommendations for continued action at the national, regional and global levels to ensure that forest genetic resources are sustainably managed for the benefit of current and future generations.

Full report at https://doi.org/10.4060/cd4838en

The Commission on Genetic Resources for Food and Agriculture

With 179 countries and the European Union as its members, the Commission on Genetic Resources for Food and Agriculture is a unique intergovernmental forum that addresses biodiversity for food and agriculture. The main objective of the Commission is to ensure the sustainable use and conservation of biodiversity for food and agriculture, and the fair and equitable sharing of benefits derived from its use for the present and future generations. The Commission guides the preparation of periodic global assessments of the status of, and trends in, genetic resources and biodiversity for food and agriculture. In response to these assessments, the Commission develops global plans of action, codes of conduct and other policy instruments and monitors their implementation. The Commission raises awareness of the need to conserve and sustainably use biodiversity for food and agriculture and fosters collaboration among countries and other stakeholders to address threats to this biodiversity and promote its sustainable use and conservation.

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